

REMARKS

Claims 1-44 and 57-127 are pending in the above-captioned patent application after this amendment. Claims 1-44 and 57-110 have been allowed. Claims 111, 115, 118, and 119 have been rejected. Claims 112-114, 116, and 117 have been objected to as being dependent upon a rejected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Applicants respectfully disagree with the rejection of claims 111, 115, 118 and 119. However, the Applicants have amended claims 111, 118 and 119, and added new claims 120-127 for the purpose of expediting the patent application process in a manner consistent with the goals of the Patent Office pursuant to 65 Fed. Reg. 54603 (September 8, 2000), and/or to clarify what the Applicants regard as the present invention.

Support for the amendments to claims 111, 118 and 119 can be found throughout the originally filed specification. In particular, support for the amendments to claims 111, 118 and 119 can be found at page 15, lines 3-17, at page 20, line 29 through page 21, line 12, and in Figures 7, 11, 12 and 15.

Support for new claims 120-127 can be found throughout the originally filed specification. In particular, support for new claims 120-127 can be found at page 15, line 3 through page 16, line 15, at page 20, line 29 through page 22, line 13, in Figures 7, 11, 12 and 15, and in the previously filed claims.

New claim 123 is based on previous claim 112 rewritten in independent form. Therefore, new claim 123 is not narrower in scope than previously filed claim 112. Previous claim 112 was found to contain patentable subject matter. Accordingly, new claim 123 is considered to be in condition for allowance.

New claim 126 is based on previous claim 116 rewritten in independent form. Therefore, new claim 126 is not narrower in scope than previously filed claim 116. Previous claim 116 was found to contain patentable subject matter. Accordingly, new claim 126 is considered to be in condition for allowance.

New claim 127 is based on previous claim 117 rewritten in independent form. Therefore, new claim 127 is not narrower in scope than previously filed claim 117. Previous claim 117 was found to contain patentable subject matter. Accordingly, new

claim 127 is considered to be in condition for allowance.

No new matter is believed to have been added by this amendment.

Reconsideration of the pending application is respectfully requested in view of the above-recited amendments and the arguments set forth below.

Allowable Subject Matter

Claims 1-44 and 57-110 are allowed. Claims 112-114, 116, and 117 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As stated above, new claim 123 is based on previous claim 112 rewritten in independent form. Previous claim 112 was found to contain patentable subject matter. Accordingly, new claim 123 is considered to be patentable. Because new claims 124 and 125 depend directly upon new claim 123, they are also considered to be patentable. Additionally, new claims 124 and 125 are based on previous claims 113 and 114 respectively, which were also found to contain patentable subject matter.

Additionally, as stated above, new claim 126 is based on previous claim 116 rewritten in independent form. Previous claim 116 was found to contain patentable subject matter. Accordingly, new claim 126 is considered to be patentable.

Further, as stated above, new claim 127 is based on previous claim 117 rewritten in independent form. Previous claim 117 was found to contain patentable subject matter. Accordingly, new claim 127 is considered to be patentable.

Rejections Under 35 U.S.C. §102(e)

Claims 111, 115, 118, and 119 are rejected under 35 U.S.C. §102(e) as being anticipated by Takahashi et al. (U.S. Patent No. 6,522,388).

The Examiner contends that "Takahashi discloses in Fig. 1, a device manufacturing method and an exposure apparatus (Fig. 1A) that transfers an image onto a substrate, the exposure apparatus mounted to a mounting base (10) and comprising: a stage (RS) that

holds a reticle (R), an optical device (PL), a substrate stage (WS), a stage base (48) that supports the stage, a base assembly (20), a first isolation system (46A - 46D) that secures the stage base to the base assembly, a second isolation system (14A - 14D) that secures the base assembly to the mounting base."

The Examiner further asserts that "Takahashi also discloses the measurement system (IFX) that monitors the position of the stage and is supported via the first and the second isolation system." Finally, the Examiner provides that "Takahashi also discloses producing a relative movement between the optical device and the reticle (col. 10, lines 14-26), and exposing the substrate that is held by the substrate stage device."

The Applicants provide that Takahashi et al. is directed to a vibration eliminator and exposure apparatus 1 comprising a reticle stage RS that supports a reticle R; a column 48 that supports the reticle stage RS and the reticle R; a fundamental base 20 that supports the column 48, with actuators 46A-46D and hard rubbers 47A-47B provided between the fundamental base 20 and the column 48; a rectangular pedestal 10 that supports the fundamental base 20, with voice-coil motors 12A-12D and air mounts 14A-14D provided near each of the four corners of the fundamental base 20 between the pedestal 10 and the fundamental base 20; and a projection optical system PL that passes through the fundamental base 20 and is secured to the fundamental base 20. The vibration eliminator and exposure apparatus further comprise Y actuators 34 and 38 that impart thrust to the fundamental base 20 in the +Y direction and an X actuator 42 that imparts thrust to the fundamental base 20 along the \pm X direction.

Local vibrations of the exposure apparatus 1 are reduced through control implemented by a control unit 2 that enables actuators 46A-46D to generate thrust along the \pm Z direction. The hard rubbers 47A-47D are provided to prevent any damage to the actuators 46A-46D from occurring when an impulsive force is generated between the fundamental base 20 and the column 48. Rigid vibrations of the exposure apparatus 1 generated between the fundamental base 20 and the pedestal 10 are reduced by the control unit 2, which controls thrusts generated by the voice-coil motors 12A-12D, the Y actuators 34 and 38, and the X actuator 42. The control unit 2 further adjusts the thrust generated from each of the air mounts 14A-14D by adjusting the quantity of air supplied to each air mount 14A-14D. (Takahashi et al. column 8, lines 45-56, column 9, lines 4-12,

column 10, lines 14-26, column 10, line 63 through column 11, line 46, column 12, lines 5-15, column 13, lines 30-43, and in Figures 1A, 1B and 4).

However, Takahashi et al. does not specifically disclose a first isolation system and a second isolation system wherein each isolation system includes a passive component for passively reducing the effect of vibrations within the exposure apparatus. In Takahashi et al., each of the elements involved in the reduction of the rigid and local vibrations are controlled by the control unit 2 to actively generate thrusts as a means for reducing the effects of the vibrations.

In distinction to Takahashi et al., amended claim 111 of the present application recites “(a)n exposure apparatus ... comprising: a stage that holds a reticle, the stage being movable relative to the optical device; a stage base that supports the stage; a base assembly; a first isolation system that secures the stage base to the base assembly, the first isolation system including a first passive component for passively reducing the effect of vibration of the base assembly causing vibration on the stage base; and a second isolation system that secures the base assembly to the mounting base, the second isolation system including a second passive component for passively reducing the effect of vibration of the mounting base causing vibration on the base assembly.”

These features are not specifically disclosed by Takahashi et al. Accordingly, amended claim 111 is believed to be patentable under 35 U.S.C. §102(e) in view of Takahashi et al. Additionally, the Applicants respectfully submit that any potential 35 U.S.C. §103(a) rejection of amended claim 111 based on Takahashi et al. is improper based on 35 U.S.C. §103(c), which provides as follows:

“(c) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.” 35 U.S.C. §103(c). (Emphasis added).

Evidence to Establish Common Ownership

The claimed invention included in the present application and Takahashi et al. were, at the time the invention in the present application was made, owned by and/or subject to an assignment to Nikon Corporation. Thus, Takahashi et al. is disqualified as prior art in a rejection under 35 U.S.C. §103(a). (See MPEP 706.02(l)(2)).

Because sufficient evidence has been provided to establish "common ownership" of the present invention and Takahashi et al., any potential rejection of amended claim 111 under 35 U.S.C. §103(a) would be improper. Accordingly, amended claim 111 is considered to be patentable over the cited reference.

Because claims 112-117 and new claim 120 depend directly or indirectly from amended claim 111, they are also considered to be patentable over the cited reference.

Further, in distinction to Takahashi et al., amended claim 118 of the present application recites " (a)n exposure apparatus ... comprising: movable means for holding a reticle, the movable means being movable relative to the optical means; stage base means for supporting the movable means; base assembly means for supporting the stage base means; first isolation means for securing the stage base means to the base assembly means, the first isolation means including a first passive component means for passively reducing the effect of vibration of the base assembly means causing vibration on the stage base means; and second isolation means for securing the base assembly means to the mounting base means, the second isolation means including a second passive component means for passively reducing the effect of vibration of the mounting base means causing vibration on the base assembly means."

These features are not specifically disclosed by Takahashi et al. Accordingly, amended claim 118 is believed to be patentable under 35 U.S.C. §102(e). Additionally, as discussed above, Takahashi et al. is disqualified as prior art in a rejection under 35 U.S.C. §103(a). Therefore, any potential rejection of amended claim 118 under 35 U.S.C. §103(a) would be improper. Accordingly, amended claim 118 is considered to be patentable over the cited reference.

Because new claim 121 depends directly from amended claim 118, it is also considered to be patentable over the cited reference.

Still further, in distinction to Takahashi et al., amended claim 119 of the present application recites “(a) device manufacturing method comprising the steps of: providing an optical device; providing a substrate stage that holds a substrate; providing a reticle stage that holds a reticle, the reticle stage being movable relative to the optical device; supporting the reticle stage with a stage base; providing a base assembly; providing a mounting base; securing the stage base to the base assembly with a first isolation system, the first isolation system including a first passive component for passively reducing the effect of vibration of the base assembly causing vibration on the stage base; securing the base assembly to the mounting base with a second isolation system, the second isolation system including a second passive component for passively reducing the effect of vibration of the mounting base causing vibration on the base assembly; producing a relative movement between the optical device and the reticle; and exposing the substrate that is held by the substrate stage, by the optical device.”

These features are not specifically disclosed by Takahashi et al. Accordingly, amended claim 119 is believed to be patentable under 35 U.S.C. §102(e). Additionally, as discussed above, Takahashi et al. is disqualified as prior art in a rejection under 35 U.S.C. §103(a). Therefore, any potential rejection of amended claim 119 under 35 U.S.C. §103(a) would be improper. Accordingly, amended claim 119 is considered to be patentable over the cited reference.

Because new claim 122 depends directly from amended claim 119, it is also considered to be patentable over the cited reference.

Conclusion

In conclusion, the Applicants respectfully assert that claims 1-44 and 57-127 are patentable for the reasons set forth above, and that the application is now in a condition for allowance. Accordingly, an early notice of allowance is respectfully requested. The Examiner is requested to call the undersigned at 858-456-1951 for any reason that would advance the instant application to issue.

Dated this the 21st day of October, 2003.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'S G Roeder', written in a cursive style.

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